

**Dam safety in Central Asia: Capacity building for regional cooperation  
(phase II: 2007 - 2011)  
Final project report, 31 May 2012**

*Leading agency:* UNECE  
*Budget:* 419,670 USD<sup>1</sup>  
*Donor:* Ministry of Foreign Affairs, Finland  
*Duration:* 1 December 2007 – 31 December 2011

## **1. Project result overview**

### **Project objective**

- Improved national dam safety legal and institutional frameworks as well as regional cooperation mechanisms on dam safety in Central Asia.

### **Project results in brief**

- A. The Governments of the participating countries have introduced or revised national regulatory frameworks for dam safety:  
**- National legislation on the safety of hydrotechnical structures established/revised in Kazakhstan and Tajikistan and revisions prepared for Uzbekistan.**
  
- B. The Governments of the participating countries have set up a regional cooperative framework on dam safety and a sustained intraregional cooperation, including the introduction and maintenance of early warning systems for dam accidents:  
**- Regional working groups are established and a draft regional agreement negotiated. Aral Sea Basin Programme 3 includes joint efforts on dam safety. Pilot early warning mechanisms are being developed for the Kirov dam.**
  
- C. The Governments of the participating countries have the necessary documentation and technical capacity for harmonizing technical regulations and procedures for the monitoring and evaluating of dam performance:  
**- Model regulation on hydrotechnical structures is developed and approved, and procedures for monitoring and evaluation of dam structures on transboundary rivers developed. Training courses held and training material produced and distributed.**
  
- D. The Governments of the participating countries have better access to potential sources of technical assistance for rehabilitation of dams and improvement of monitoring and early warning systems:  
**- The project has contributed to the involvement of several donors and international organizations in the work on dam safety. Examples are the Russian Federation, Slovakia, GIZ Germany and the Eurasian Development Bank.**

All information about the project and its implementation including meeting reports are found at:  
[www.unece.org/env/water/damsafety.htm](http://www.unece.org/env/water/damsafety.htm).

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<sup>1</sup> A Funds Utilization Report is found in Annex 1.

## 2. Progress achieved

In the following an account is given of the achievements of the project. More details on the respective achievements can be requested from the project manager at UNECE<sup>2</sup>. The ENVSEC evaluation from November 2010 (Annex 2) is a source of independent information about the project.

As was indicated by the ENVSEC 2010 evaluation, the project has made an important contribution in raising the awareness of dam safety as a serious issue in all countries of Central Asia. An increased attention to the issue as well as the project is also due to the accident in the Sajano-Shushenskaya Hydropower station in the Russian Federation in 2009 and the flooding and fatalities caused by the break-through of a smaller dam in Kyzyl-Agash, Kazakhstan in 2010.

Against the background of the tense political relations in the water sector of Central Asia, the project and its meetings has provided a forum for open and constructive dialogue thus adding a confidence building profile to the technical work under the project.

### **Output A: The Governments of the participating countries have introduced or revised national regulatory frameworks for dam safety**

In all of the participating countries, some action has been taken in order to formulate legislation on dam safety or improve the existing regulatory and institutional framework for dam safety on the basis of the Model National Law on the safety of hydrotechnical structures prepared in phase I of the project.

#### ***Kazakhstan.***

A draft national law proposing incorporation of amendments related to the safety of hydrotechnical structures in the national Water Code has been reviewed within the framework of the project. As a result, some revisions were introduced in the Water Code. In recent developments further changes in the national legislation have been identified to adequately handle safety issues of hydrotechnical structures. An important step towards the strengthening the legislation in this sector was made with the approval of national “Rules for the safety of water management systems and structures” by the Government on 12 May 2009.

#### ***Kyrgyzstan***

A decision has been taken to establish a National Commission for Dam Safety and a law on establishing the Commission as a national regulator for the safety of large hydrotechnical structures has been drafted. The Model Law was suggested to the Parliament as a basis for the future legislation but its approval is still pending, mainly due to the political changes in the country in 2010. A practical step forward has been the establishment of a national working group on dam safety that has improved the cooperation between the different involved authorities.

#### ***Tajikistan***

On the basis of the Model Law developed in the framework of the project the law “On the safety of hydrotechnical structures” was approved by the Parliament in January 2010. Several regulations supporting the regulation of this law have been developed with the support of the project.

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<sup>2</sup> Bo Libert, Regional Adviser, mail: bo.libert@unece.org.

## ***Turkmenistan***

The necessity of having a national law on safety of hydrotechnical structures was recognized by participants at the national seminar on dam safety (Ashgabat, 12 June 2008) but the development of specific legislation on the safety of hydrotechnical structures has not been pursued. However, presently a Water Inspection is being established under the Ministry of Water Resources with a mandate including the supervision of the safety of hydrotechnical facilities.

## ***Uzbekistan***

Uzbekistan is the only country in Central Asia that also before the project had specific legislation (from 1999) and an institution responsible for dam safety. The Uzbek experience has been of importance in the project work for the other Central Asian countries. A revision of the national law on the safety of water management infrastructure was initiated in 2008. A review of the proposed changes, along with recommendations for improving the draft, was made by under the project. However, the draft of the legal act, accordingly revised and approved by relevant ministries, has not yet been adopted by the Parliament.

**Output B: The Governments of the participating countries have set up a regional cooperative framework on dam safety and a sustained intraregional cooperation, including the introduction and maintenance of early warning systems for dam accidents.**

Two Regional Working Groups “on Normative Legal and Technical Regulation of the Safety of Hydrotechnical Structures” and “for Development of a Draft Agreement on Cooperation with respect to the Safety of Hydrotechnical Structures in Central Asia” have been established and are actively working.

The development of an agreement on cooperation in the field of the safety of hydrotechnical structures in Central Asia has continued but due to the tense political relations in the region the agreement has not been signed. None of the basic articles in the draft agreement are disputed and the countries have agreed on the continuation of efforts to finalise the agreement within the framework of the Executive Committee of the International Fund for the Saving of the Aral Sea with the support of UNECE.

An important step forward is the inclusion of dam safety as a key item for cooperation in the Aral Sea Basin Programme – 3 that was recently approved by all Central Asian countries.

A joint working group with representatives of Kazakhstan and Kyrgyzstan as well as experts from Russia has been established to make an assessment of the Kirov dam on the transboundary Talas river. The methodology for the assessment was prepared and the assessment made during 2011. This assessment - concluding that the dam is safe but that the monitoring of the status needs to be improved - has been handed over to the bilateral Chu-Talas Water Management Commission for further actions. Plans for improving the monitoring of the dam’s safety are being developed. A videofilm on the work on the Kirov dam has been produced and made available on Youtube ([http://www.youtube.com/watch?v=Q00p\\_xKH4NQ&feature=related](http://www.youtube.com/watch?v=Q00p_xKH4NQ&feature=related)).

**Output C: The Governments of the participating countries have the necessary documentation and technical capacity for harmonizing technical regulations and procedures for the monitoring and evaluation of dam performance**

This work has been supported by complementary funding from the Russian Federation, which has made it possible to engage the Centre on Safety of Hydrotechnical Structures (Moscow), Association Hydroproject (Moscow) and the Vodoavtomatika Institute (Bishkek) in the activities.

On the basis of existing legal acts and technical documents used in the Russian Federation and the five Central Asian states for regulating the safety of hydrotechnical structures, a model technical directive (reglament) on the safety of hydrotechnical structures has been developed. This directive includes model law provisions as well as technical norms. The model technical directive was approved by representatives of Central Asian countries in September 2011.

Three training courses were organized under the project, in Tashkent, May 2009 and November 2010 and in Moscow 2010. These were the first trainings on the subject in the region since 1990 and have contributed to the raising of capacity and also to a dialogue on technical documentation and regulations between the countries. Experiences from several countries such as Germany, Russia and Slovakia were high-lighted during the training events. CDs and printed booklets with materials generated at the training courses held have been produced and distributed in the region.

The State Inspection on Control and Supervision of the Technical Condition and Safe Operation of Large and High-Security Waterworks of the Republic of Uzbekistan (Gosvodkhoz nadzor), Uzbekistan was supported to develop its website and to procure equipment (video projector, screen and translation equipment) for its training center. A training centre for the safety of hydrotechnical structures has further been established at the Ministry for Land Reclamation and Water Resources in Dushanpbe, Tajikistan with the contribution of computer working places and other equipment funded by the project.

**Output D: The Governments of the participating countries have better access to potential sources of technical assistance for rehabilitation of dams and improvement of monitoring and early warning systems.**

Under the project quite significant progress has been made to increase the involvement of other international organizations and donors in the area of safety of hydrotechnical structures in the five countries.

**Association Hydroproject:** Collaboration has developed with the Association of Hydroproject, which is a loose union of research and design institutes in the area of hydrotechnical structures in the former USSR republics. With their active participation, progress has been achieved in formulating a model technical directive including a set of technical norms as noted above.

**EurAsian Economic Community (EurAsEC):** In May 2008, the EurAsEC Interparliamentary Assembly adopted the Model National Law on safety of hydrotechnical structures and recommended its member-countries to refer to that Law while drafting or revising their national legislations for regulating safety of dams and other hydrotechnical structures. EurAsEC representatives have participated in project meetings.

**Eurasian Development Bank (EADB):** EADB has provided co-funding to the implementation of individual components of the UNECE project including the international training

course on the safety of hydrotechnical structures for high-level participants in Moscow 2010. The Bank has also funded and produced a publication in Russian: "Safety of hydrotechnical installations in Central Asia: Problems and approaches for solutions"<sup>3</sup>, March 2011.

**European Commission (EC):** An application for support under an EC project in 2012-2013 has been submitted.

**German Technical Cooperation (GIZ):** In the German initiative "The Berlin Process", to support the development of water cooperation in Central Asia, safety of hydrotechnical structures has been included. Several activities have been implemented including the organization of, jointly with the UNECE, a regional seminar on the sustainable and safe exploitation of large hydrotechnical structures in Central Asia 23-25 November 2010 in Tashkent, Uzbekistan.

**Russian Federation:** Significant co-funding of the project was provided and for 2011-2013 an annual funding of 25,000 USD is being provided for new activities.

**Slovakia:** Experts from Slovakia has participated in seminars under the project and for the next project phase funding for continued cooperation will be made available.

**The World Bank:** The cooperation with the World Bank project on restructuring the water sector management in Kyrgyzstan has resulted in a draft law on the safety of hydrotechnical installations.

### 3. Project meetings and training

Below a summary list of meetings, consultations and training organized under the project is provided. Meeting reports can be found on [www.unece.org/env/water/damsafety.htm](http://www.unece.org/env/water/damsafety.htm).

#### Regional meetings

- Six regional project meetings have been held with the participation of all five Central Asian states: In Tashkent 12-13 March 2008 and 12-13 April 2009; in Almaty 18-19 November 2008 and 2-3 March 2011; in Bishkek 19-20 November 2009 and 19-20 September 2011.
- Meetings of the Project Working Group on Normative Legal and Technical Regulation of the Safety of Hydrotechnical Structures (Technical WG) took place in Almaty 18-19 November 2008 and 2-3 March 2011; In Tashkent 14 May 2009; In Moscow 16-20 August 2010.
- Meetings of the Project Working Group for Development of a Draft Agreement on Cooperation with respect to the Safety of Hydrotechnical Structures in Central Asia (Agreement WG) were held in Almaty 18-19 November 2008, 27 August, 2009 and 2-3 March 2011.
- A meeting was held 3 March 2012 in Tashkent between the heads of the Agency for Water Resources at the Ministry of Natural resources and State Inspection on Control and Supervision of the Technical Condition and Safe Operation of Large and High-Security Waterworks of the Republic of Uzbekistan (Gosvodkhoznadzor) to discuss the possibilities for cooperation on the safe exploitation of hydrotechnical structures of importance for both countries on the transboundary watercourses in the Fergana valley. After this meeting a

programme of joint actions by Kyrgyzstan and Uzbekistan was developed but will be implemented only in the following phase of the project.

#### **National meetings**

- National meetings have been held in Kazakhstan (Almaty, 16 June 2008; Astana, 27 August 2009; Almaty, 19 October 2010), Kyrgyzstan (Bishkek, 14 November 2008), Tajikistan (Dushanbe, 30 October 2009), Turkmenistan (Ashgabad, 12 June 2008) and in Uzbekistan (Tashkent, 14 March 2008).
- A national conference “Problems of the Technical Conditions and Safety of Hydrotechnical Structures” that took place in Tashkent, August 2009 was supported by project funds.

#### **Training courses**

- A Pilot Regional Training Course on Ensuring the Safety of Hydrotechnical Structures in Central Asia was organized in Tashkent, Uzbekistan from 11 to 14 May 2009. It was organized in close cooperation with the State Inspection on Control and Supervision of the Technical Condition and Safe Operation of Large and High-Security Waterworks of the Republic of Uzbekistan (Gosvodkhoznadzor).
- An international training course on the safety of hydrotechnical structures for high-level participants from Central Asia was held 16-20 August 2010 in Moscow. The training course was held in cooperation with the Scientific-technical Centre “Safety of hydrotechnical structures” with the main funding coming from the Russian Federation.
- A regional seminar on the sustainable and safe exploitation of large hydrotechnical structures in Central Asia was held 23-25 November 2010 in Tashkent, Uzbekistan. The seminar was organised in cooperation with GIZ, Germany.

## **4. Project co-funding**

Under the project quite significant progress has been achieved with the involvement of other international organizations and donors supporting the work on furthering the safety of hydrotechnical structures in the five countries (see output D).

As expected considerable co-funding from the side of the participating beneficiary countries in terms of work time, travel as well as investments can be noted. This contribution has not been estimated in monetary terms.

Co-funding in-kind of the project was supplied by UNECE for project management and travel (estimated to 100,000 USD) and from the following donors the approximate co-funding is estimated to:

GIZ: 40,000 USD

Russian Federation: 100,000 USD

Slovakia: 10.000 USD

Eurasian Development Bank: 10,000 USD

## 5. Lessons learned, obstacles, project ownership and sustainability

UNECE had the opportunity to work closely with all five countries as well as regional organizations during project implementation. Some of the lessons learned from this experience are:

- It has become evident that the work on dam safety in the region is even more needed than was initially anticipated – from a human safety, political as well as economic point of view. The declining hydro-technical infrastructure in the region, with a reinvestment value of several billion USD, plays a very important role for production in key sectors. This explains the very positive response from the countries with regard to the importance of the project.
- The implementation of the project has contributed to an increased understanding of the challenges involved. Indications that the countries are taking the issue very seriously include:
  - New legislation and revision of legislation/institutions (at different levels) in all countries.
  - Inclusion of dam safety as a key issue in the Aral Sea Basin Programme 3, the programme for cooperation between the countries in the region decided on at the governmental level.
  - Separate bilateral efforts to develop cooperation on specific dams (e.g. the Kirov dam).
  - National initiatives to establish training programmes/centers in Uzbekistan, Kazakhstan as well as Tajikistan.
- Dam safety has proven to be a theme where the countries can establish a dialogue and cooperate constructively in spite of political tensions.
- Project activities have attracted the attention of other international actors that established cooperation with UNECE and the project funded by Finland.
- Training efforts at the regional level of the project have been of great importance but has also exposed the considerable remaining needs in most countries.

Several obstacles for further achievements in the sector have been identified:

- Lack of financial resources, in particular in Kyrgyzstan and Tajikistan.
- With the possible exception of Uzbekistan there is a general lack of expertise for development of legislation, regulations, supervision and management of dams. While this is a remaining need to be addressed in a planned future project, this is also a draw-back for the further development of legislation and policies.
- Turkmenistan has participated in most meetings but the political system has made it difficult attract a broader representation and to develop a dialogue on

the national level. Nevertheless, there is now a changed structure of the Ministry for Water Management that reflects an increased attention to water infrastructure. This is probably due also to other factors than the project.

The one-year delay of project implementation was requested due to the political events in Kyrgyzstan in 2010. Another reason for the request was well that additional activities, previously not foreseen, could be funded with remaining funds. One example is the initiation of the work on the Kirov dam.

Project **ownership** of the countries is closely related to the **sustainability** of project results. It can be concluded that the project ownership as well as its sustainability – on the national as well as regional levels - are high. Positive factors have been that the dam safety project was initiated on the request of the countries in the region and that country representatives have had a strong voice in the planning of its implementation.

Starting from a low level of national capacity, the project has contributed to sensitise decision makers as well as experts on the importance of dam safety issues. While dam safety was seen as an important issue in Uzbekistan already before the start of the project, the project has played a key role for raising the issue in the other four countries as well as in regional organizations.

On the regional level the ownership is demonstrated by political decisions by the Board of the International Fund for the Saving of the Aral Sea, the step-by-step development (but not yet finalised under the present difficult political situation) of an agreement for cooperation between the five countries as well as the prominent inclusion of the issue in the third Aral Sea Basin Programme (ASBP 3). Dam safety has several times been raised in speeches of high-level country representatives.

On the national level, the introduced or changed legislation in several of the countries (see section 2 of this report) and the approval of the ASBP 3 are examples demonstrating a clear ownership of project implementation and its result.

The country representatives have also been very active in the development of a proposal for further work including sending letters signed by high-level representatives in support of a continuation.

As an indication of the sustainability of project results the activities on the national as well as regional levels are continuing after the conclusion of the project. For example, the cooperation on the safety of the Kirov dam as well as the development of a training centre in Kazakhstan are moving forward also in 2012.

A key sustainability indicator is the legislation introduced, for example in Tajikistan. Important work is also continuing in 2012 in this country with the development of regulations under the new law.

The model technical directive (reglament) on the safety of hydrotechnical structures including model law provisions as well as technical norms approved by representatives of Central Asian countries in September 2011 is a good platform for sustained project impact on the regional level.

The project was evaluated as one of several ENVSEC projects in 2010 by Gaia Consulting OY<sup>4</sup>. With regard to sustainability the evaluation stressed that: *“The project has several components that support the likely continuation of the project benefits, once the intervention is ending. However, the progress reached so far is still fragile, and several measures are needed to ensure progress towards the overall goal of the project.”* and *“In conclusion, the project has built several components that support*

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<sup>4</sup> Evaluation, Environment and Security Initiative (ENVSEC), 17 November 2010, Gaia Consulting OY



*continued project benefits after the donor funded intervention is completed. However, there are also several arguments, which would support considering further follow-up measures....”* Overall, UNECE would agree to that statement.